



Rheinhold & Mahla

Since 1887



Mittelpunkt Mensch. Comfort and safety on board.

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Expertise for over a century

The R&M Group is a global provider of individual and turnkey solutions for interior outfitting on board all types of maritime applications such as special vessels, cruise ships, ferries, and offshore platforms. Our extensive portfolio comprises services along the entire value chain, including engineering, consulting, design, planning, implementation, and production of new builds, conversions, and repairs. We perform thermal and acoustic insulation, noise and vibration protection, interior systems, the design and installation of heating and air conditioning systems as well as the construction of pipelines and the production of furniture. We implement individual and multiple systems in the capacity of a system integrator. The projects are carried out by an excellent team of several subsidiaries worldwide. In the process, we always aim to find tailor-made solutions for you.

In the maritime industry, it is very important to observe the environment and the related changes in order to quickly react to them. The market environment is faster, and you have to be more flexible than ever before. We have been able to securely position the R&M Group in the market. In particular, we have implemented optimization processes and have registered continuous growth. With our wide-ranging expertise in combination with unique technical know-how and highly specialized engineers as well as profound ship industry knowledge, we have gained an excellent reputation as a global leader.

As the partner of maritime industry interiors on board, we always deliver the highest quality of services, products and solutions. The R&M Group applies risk management and stringent supply chain management processes to ensure that the envisaged performance is guaranteed. We continuously adopt the necessary measures to secure financial stability and investments in future innovations.

Customer Care and Customer's success is the prime motivation of our actions and having proven repeatedly, we have gained global sustainable customer relationship. Summarizing, we stand for the safety, comfort, and pleasure of passengers and crew on board, vividly reflected in our company slogan "Mittelpunkt Mensch. Comfort and safety on board."



Ramesh Krishnan
CEO & Chairman



Sören Krebs
CFO & Vice Chairman



Welcome on board



The R&M Group provides passengers and crew members the best comfort and safety on board. In the maritime industry, we are a well-established and international supplier of interior, outfitting for all ships and possible maritime applications. R&M is a synonym for reliability, thoroughness, perfection, and quality. Our headquarters are located in Germany, where we have been at anchor since 1887.

- Our headquarters in Hamburg.
- The Rheinhold & Co. factory, 1900.



Rheinhold & Mahla
Since 1887



alvedoor marine
Product Division of R&M Group



Our company brand

R&M is a company with tradition and consistency in changing times. Our logo for the company brand contains the name "Rheinhold & Mahla", which were the original founders, the brothers Otto and Sartorius Rheinhold as well as the brothers Emil and Carl Mahla. A further integral part of the logo is the Greek letter Lambda (λ). It is a symbol used in formulas for thermal conductivity and was integrated in the company logo because the roots and the heritage of Rheinhold & Mahla was originally in insulation materials.

Our product brand

Alvedoor Marine is our product brand and product division of the R&M Group. High-quality products from doors, floors, walls, and ceilings to wet units, cabins, and furniture are manufactured at our production units in Germany (Wismar and Rostock) and China (Kunshan). We produce and deliver high quality just-in-time to every shipyard in the world. In 2012, R&M acquired the company Alvedoor, originally founded in 1975 as a manufacturer only of doors for ships. Following this merger, the existing product line of the former company R&M Marine Products was merged with Alvedoor's product portfolio to form our product division of the R&M Group and our product brand: Alvedoor Marine.

Our service – refurbishment

R&M has a very extensive range of services within the entire portfolio. Due to the service of refurbishment, the R&M Group is able to serve the customers along the entire ships' lifecycle. We can offer turnkey solutions and our customers have the possibility to reduce interfaces, save costs and increase efficiency. R&M acquired the company Sea Level Marine, LLC in 2015 to align its resources. This enables R&M to offer a service of refurbishment on a perfect way.

Quality management

Our subsidiaries, R&M Ship Technologies GmbH and R&M Alvedoor (Kunshan) Co. Ltd., have implemented a quality management system according to DIN EN ISO 9001:2008. The certifications for our subsidiaries in Norway, Finland, and the USA will follow shortly.

The main principles of this DIN standard are, for example, customer focus, process orientation, and continuous improvement. This standard ensures continuous quality assurance, which is firmly anchored in our thoughts and actions.

In order to meet the quality awareness of our global customers in regards to our products, we thoroughly apply a professional quality management system according to Module D within our production units in Germany and China – ensuring consistently high product quality.

Our products meet the requirements of various international and highly prestigious certification companies. We collaborate closely with all the classification societies and long-standing reputation for quality.

We are certified by:

Prüf- und Zertifizierungsstelle
BG Verkehr
Dienststelle Schiffssicherheit



Blohm+Voss Repair



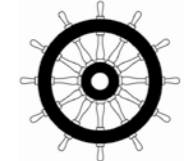
ABS –
American Bureau
of Shipping



DNV GL – Det Norske Veritas
and Germanischer Lloyd



MED –
Maritime Equipment Directive



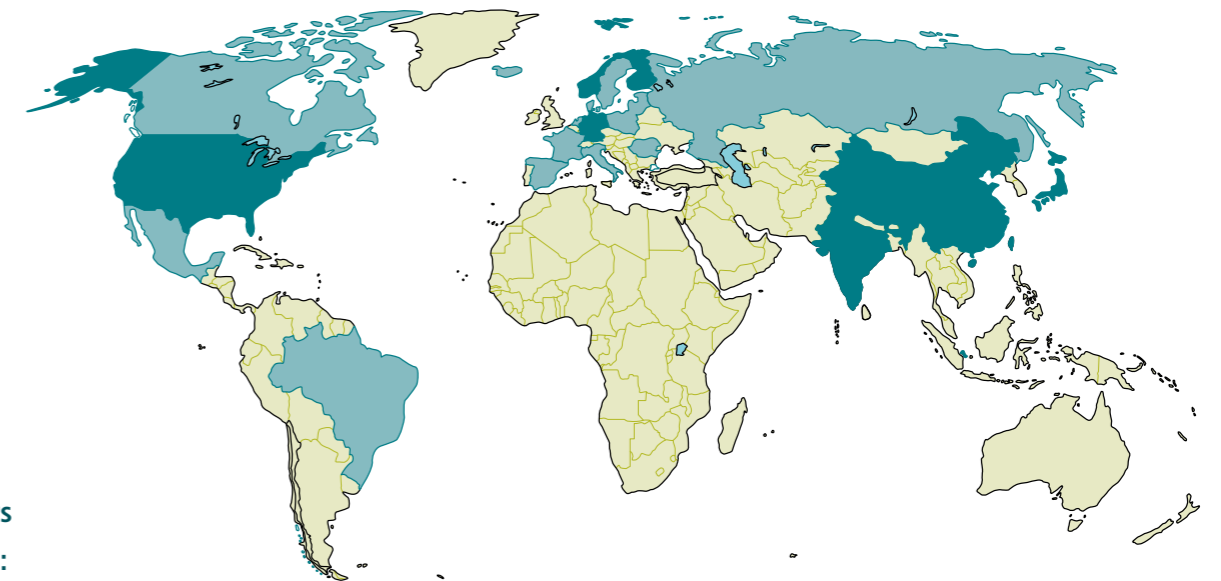
USCG –
United States
Coast Guard



RMRS –
Russian Maritime
Register of Shipping



R&M Worldwide



Globally yours

Our locations:

- R&M Germany, Hamburg (Headquarters)
- R&M Germany, Bremerhaven
- R&M Germany, Rostock
- R&M Germany, Wismar
- R&M Brazil, São Paulo
- R&M China, Kunshan
- R&M Finland, Turku
- R&M India, Chennai
- R&M Japan, Nagasaki
- R&M Norway, Molde
- R&M Romania, Constanta
- R&M USA, Philadelphia
- R&M USA, Miami

Our sites:

- Bremerhaven ■ Bremen ■ Chennai ■ Constanta ■ Elsfleth ■ Fosen ■ Hamburg ■ Kiel ■ Kunshan ■ Lemwerder ■ Miami ■ Molde ■ Nagasaki
- Neumünster ■ Ningbo ■ Papenburg ■ Philadelphia ■ Rendsburg ■ Rostock ■ São Paulo ■ Singapore ■ Stralsund ■ Söviknes ■ Turku
- Ulsteinvik ■ Warnemünde ■ Wismar

R&M Group

Focused sectors with broad experience

The R&M Group has many years of experience in interior outfitting on board of all types of ships and maritime applications. There are many different specifications for every type, which have to be met.

Cruise & Ferry:

- Mega Cruise Ships
- Cruise Ships
- River Cruise Ships
- Expedition Ships
- RoPax
- RoRo

Offshore:

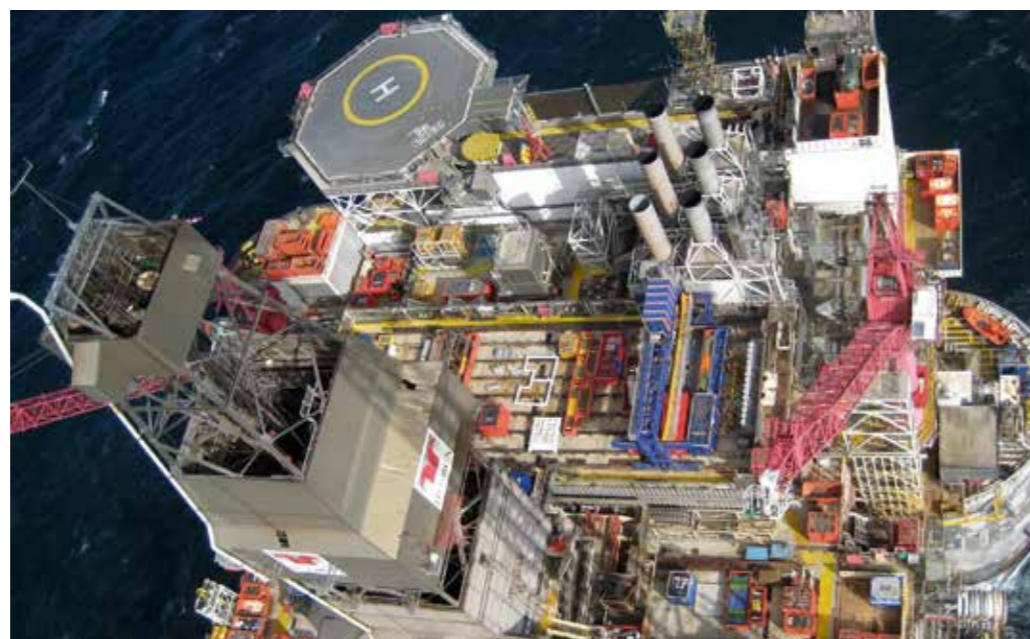
- Platforms
- PSV (Platform Supply Vessel)
- OSV (Offshore Supply Vessel)
- CSV (Construction Support Vessel)
- WIV (Well Intervention Vessel)
- Seismic Vessels
- Floatels

Special Vessels:

- Mega Yachts
- Authority Vessels
- Pilot Boats
- SWATH Vessels
- Research Vessels

Navy Vessels:

- Surface Vessels
- Support Vessels
- Submarines



Turnkey solutions

Our key for success

The portfolio of the R&M Group covers services, products, and solutions for new builds, conversions, and repairs. This includes thermal and acoustic insulation, noise and vibration protection; accommodation systems, the design and installation of heating and air conditioning systems; as well as the construction of pipelines and furniture, which are all integrated parts of turnkey solutions.

Be it engineering, project management, the production of interior accommodation, or insulation or installation, the R&M Group supports its customers along the entire value chain. As we are able to realize turnkey solutions, our customers have fewer interfaces and thus benefit from smoother processes.



Portfolio overview at-a-glance

Our range of services includes individual and turnkey solutions; services like research & development, engineering & consulting, production & logistics, project management & field-executions and maintenance & refurbishment; our products such as walls, doors, floors, ceilings, wet units, cabins, and furniture; as well as solutions in HVAC, piping systems, welding, shipfitting, and insulation. We operate in the various sectors on board every type of maritime facility.

Our focus is on the well-being of the crew and passengers on board ships fitted out by R&M, which is also reflected in our slogan "Mittel-punkt Mensch. Comfort and safety on board." To achieve this result, the balance between λ (thermal conductivity), f (vibration), dB (sound), and $^{\circ}\text{C}$ (temperature) has to be coherent. The significance of the Lambda symbol in our logo stands for exactly this. Be it during the planning, preparation, or realization phase of a project, we guarantee with our products, solutions and services maximum comfort and safety on board for our customers globally.





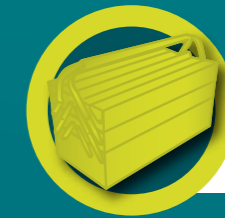
Turnkey



New Builds



Conversions



Repairs

Research & Development

Engineering & Consulting

Production & Logistics

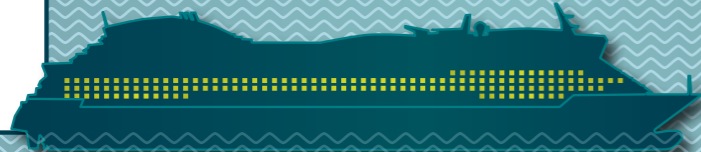
Proj. Mgmt. & Field-Executions

Maintenance & Refurbishment

Shipfitting Welding Insulation HVAC Piping Systems Walls Ceilings Floors Doors Furniture Cabins Wet Units

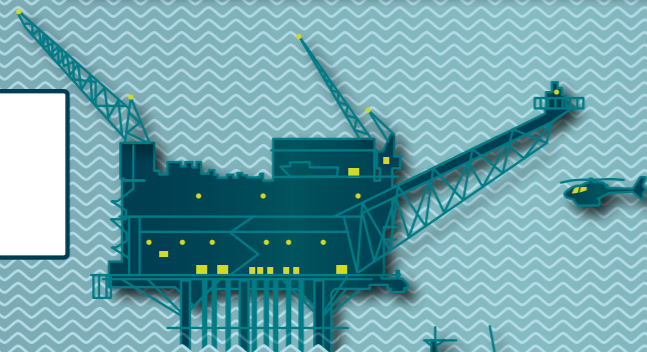
Cruise & Ferry

- Cruise Ships RoPax
- RoRo River Cruise Ships
- Expedition Ships



Offshore

- Platforms PSV OSV
- CSV WIV Seismic Vessels
- Floatels



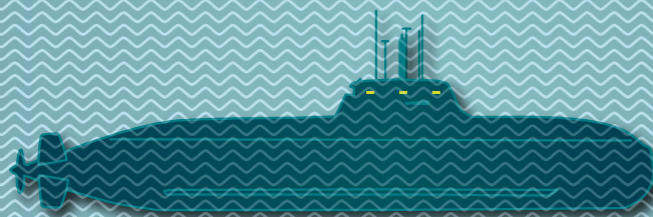
Special Vessels

- Mega Yachts Authority Vessels
- Pilot Boats SWATH Vessels
- Research Vessels



Navy Vessels

- Surface Vessels Support Vessels
- Submarines



Comfort

Safety

Crew

Passenger



Passenger Area

- Cabins Balconies
- Wet Units
- Flat Packs
- Prefab Cabins



Crew Area

- Cabins
- Wet Units
- Recreational Rooms
- Crew Mess Room



Public Area

- Restaurants Bars
- Staircases, Corridors
- Lounges, Discos, Casinos
- Spa



Utility Area

- Bridges Engine Rooms
- Air Conditioning Rooms
- Laundries
- Galleys, Provision Stores



Brazil

■ São Paulo



China

■ Kunshan
■ Ningbo



Finland

■ Turku



Germany

■ Hamburg
■ Bremerhaven
■ Rostock
■ Wismar
■ Bremen
■ Elsfleth
■ Kiel
■ Lemwerder
■ Neumünster
■ Papenburg
■ Rendsburg
■ Stralsund
■ Warnemünde



India

■ Chennai



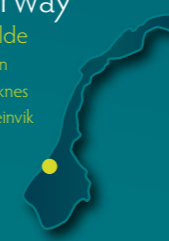
Japan

■ Nagasaki



Norway

■ Molde
■ Fosen
■ Soviknes
■ Ulsteinvik



Romania

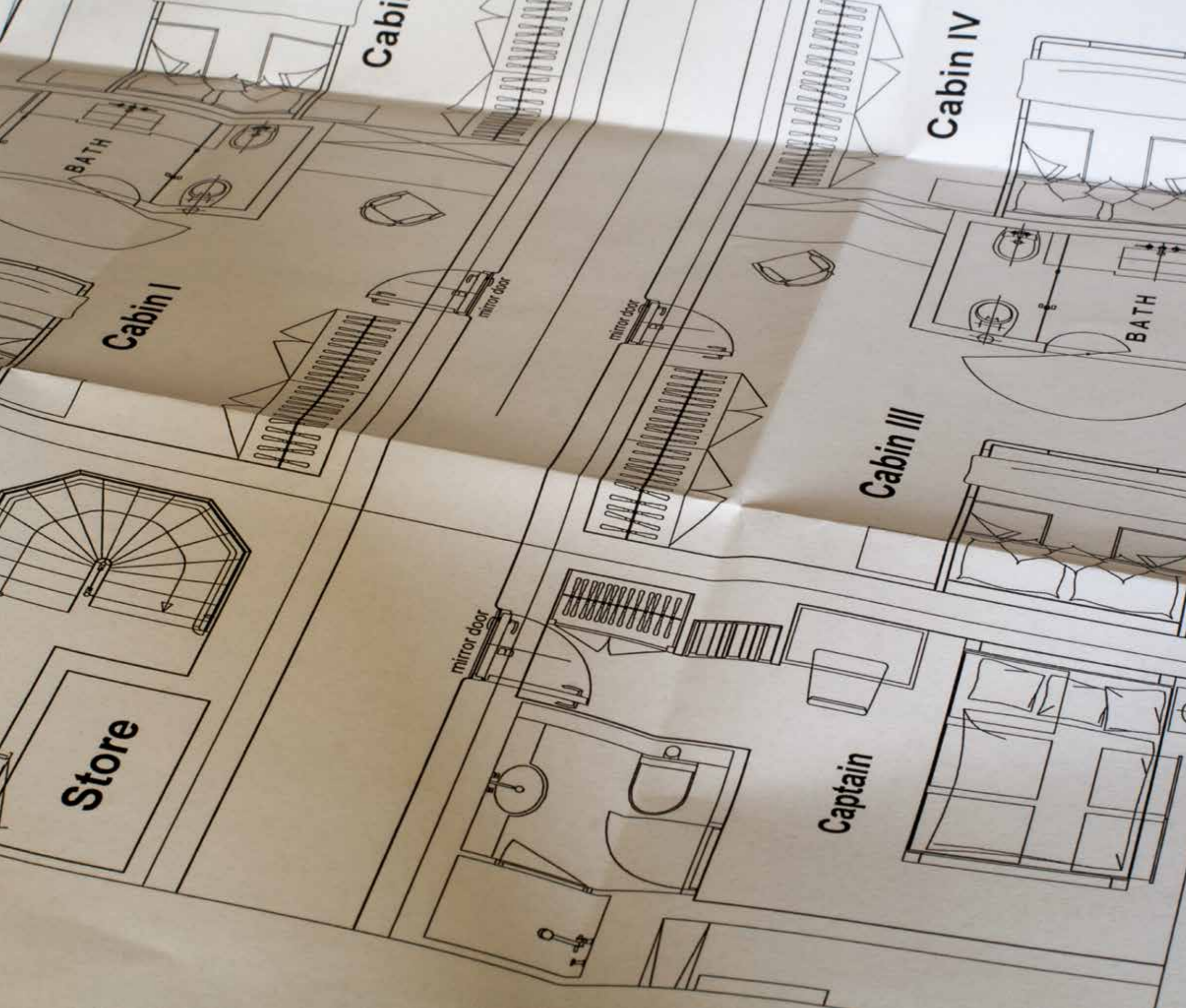
■ Constanta



USA

■ Philadelphia
■ Miami





Services

From the initial ideas to the finished interior outfitting, our priority is customer satisfaction. Therefore we have always the view for the entirety. Our comprehensive, turnkey concepts include a long-term Service Level Agreement and reliable services for our customers at all times.

Research & Development

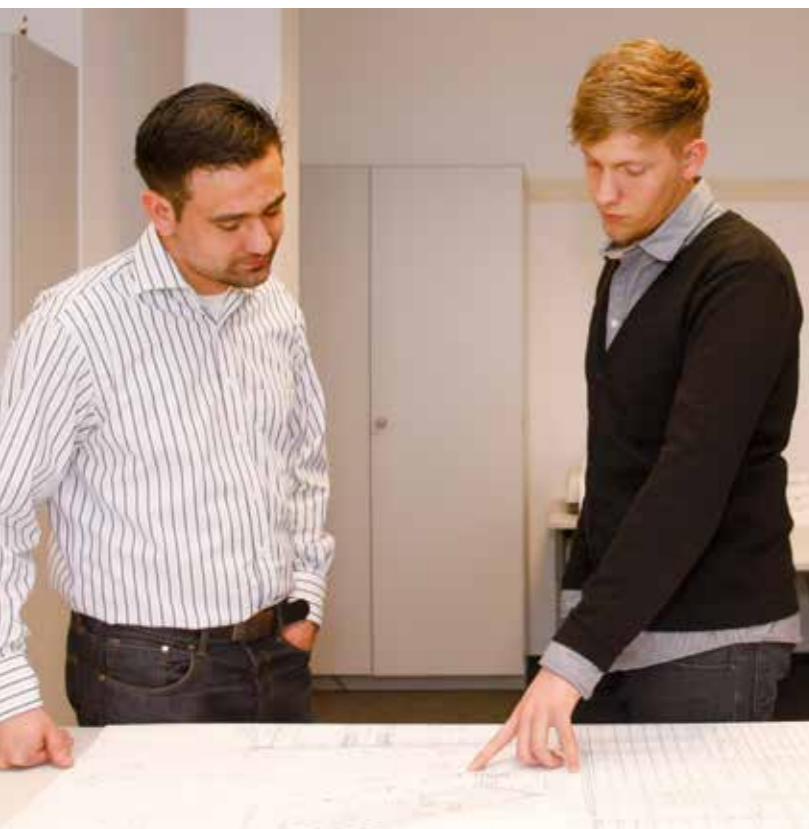
Innovation is our passion

Ever since our foundation in 1887, we have been investing in our innovative capacity. We collaborate with various different research institutes worldwide enabling us to keep our broad product portfolio at the cutting edge. Thus, we can quickly and effectively react to changing customer needs.

Our team consist of highly qualified engineers with many years of experience and technical know-how in ship interior fittings. Experienced engineers and technicians design, develop, and test customized concepts, particularly for thermal and acoustic insulation and fire protection, while keeping in mind international regulations for

shipbuilding. Such concepts are based on a comprehensive calculation of acoustics. We have patents and utility models ranging from multilayer-panels and floor modules to de-icing with vibration. These enable us to enhance and boost quality for our existing products and for new products yet to come.

Especially in today's market, it is very important to be innovative and to have an in-house research and development unit. We know this at R&M and therefore continuously work on creating new solutions.



Engineering & Consulting

Excellent engineering skills

Our engineering services model combines R&M's deep knowledge of shipbuilding standards and processes based on many years of experience with our high quality and cost effective project execution model.

R&M's Engineering Services provides best in class global services to our customers covering a wide range:

- HVAC Sizing, Design, Installation Plans
- 3D Interior Design and Simulations
- Acoustic Design / Sound and Noise prediction
- Electrical and Piping
- Fire Protection and Thermal Insulation

Benefits for our customers:

- Value adding solutions coming out of effective collaboration across our worldwide organization and its vertically integrated delivery portfolio
- Increased flexibility and improved time to market through on demand, project based engineering services
- Risk and cost control by using standardized processes and our rigorous application of quality and performance control mechanisms.

R&M's Engineering Team is familiar with all types of maritime applications and their technical specialties. This provides our team with deep understanding of the specific requirements that each type of ship demands – be it cruise ship, ferry, offshore vessel or mega yacht.

We believe that knowledge consolidation between domain experts from the global R&M Team is a key factor for successful project execution. This combined expertise puts R&M into a position to cover the whole shipbuilding lifecycle from planning and construction to refurbishment and redesign of every area on board.



R&M deploys advanced tools for the design and optimization of all projects. Layout, simulation, planning and optimization are conducted using state of the art 3D engineering tools including the Design Suite 3D.CabLab, which has been developed especially for R&M. The 3D.CabLab is a web-based tool that enables our customers to develop and simulate adequate solutions supported by R&M's engineers and architects starting from a very early stage of the ship design process. These tools help us to create digital mock-ups, which can be modified as desired in real time – to help our clients develop the best possible solution meeting their expectations and business need.



Our 3D.CabLab simulation, planning, and optimization tool at-a-glance:

- Modifying of interior concepts
- Enabling of simulation of individual customers needs
- Arrangement of all suitable installations to every need in combination with physical attributes such as sound, temperature, and thermal conductivity
- Clear savings in cost and time by shortened design approval processes
- Planning at the right stage to ensure efficiency throughout the entire project

Production & Logistics

Just in time and just in place worldwide

Under our brand Alvedoor Marine, we manufacture products such as walls, ceilings, doors, floors, wet units, cabins, and furniture at the highest quality and according to modern and standard requirements. We provide efficient, customized, and turnkey individual and complete solutions in maritime interior design. The products are manufactured in our production units in Germany and in China, where we have sophisticated, efficient and worker-friendly production lines. Thanks to our integrated supply chain management, our deliveries are in time and in place. The logistics department is extremely well organized around the world.

Furthermore, the production at every location is frequently controlled by experts to ensure that all processes are in line with proven certifications such as DIN EN ISO 9001:2008. Workflow management systems are used in our applications in combination with production planning and control systems (PPC) as well as computerized numerical control machines (CNC).



Project Management & Field-Executions

Experience speaks for itself

Both for small and large projects, the planning phase is the most important step and has to be performed on a professional level. R&M takes a well-structured approach to deliver on its promises in a controlled manner. This approach covers the entire lifecycle of our projects.

The key aspects of this approach are:

- Well thought through delivery plan which is based on R&M's experience and proven delivery approach
- Rigorous quality management procedures help to enforce excellent results to our clients
- Strong governance and risk management to control the uncertainties of shipbuilding projects

- Experienced and highly motivated teams, who have the relevant expertise using state of the art tools
- Leadership commitment to deliver on our promises to our clients – right down to the last detail.

Our motivated teams on site are multi-skilled and interdisciplinary, and are therefore able to execute all actions seamlessly in close collaboration with owners, architects, and yards.



Maintenance & Refurbishment

Along the entire ships' lifecycle services

We are able to implement projects for new builds, conversions and for repairs. R&M is also a partner for maintenance & refurbishment. This is a very large benefit for you, as it enables you to avoid having many interfaces. R&M can support you at every stage of the ship's lifecycle.

All ships are exposed to extreme conditions in a salt environment and have to be maintained and refurbished after a certain period, depending on usage, abrasion, and size.

Professionalism, flexibility, and competency count – so turn to our highly qualified R&M Team.

Our services range from recording the damage to inspection in conjunction with the shipping group's inspectors.

Our services:

- Engineering
- Ship inspections
- Repairs offshore
- Material and spare parts deliveries
- Supervision and project management
- Service Level Agreements



Maintenance & Refurbishment

Refurbishment Division of R&M Group

Sea Level Marine, the refurbishment division of the R&M Group, specializes on renovating cruise ships. Our highly skilled team provides turnkey construction including consulting, design, planning, implementation, and production on the highest level of quality.

Sea Level Marine's field installation crews encompass the full range of skilled trades required for build-outs in compressed timelines. With many years of experience in refurbishment, our dedicated professionals utilize tailored scheduling and project management tools that will keep your project on track and on time.





Products

Our high-quality products are regularly subjected to comprehensive tests in accordance with our own quality management standards and international guidelines.

We produce all the important components for the maritime industry, for both crew and passengers: walls, ceilings, doors, floors, wet units, cabins, and furniture for every area on board.

Alvedoor Marine

Product Division of R&M Group

Alvedoor Marine, the product division of the R&M Group, has three production facilities altogether, in Wismar and in Rostock (Germany), as well as in Kunshan (China). By dividing production in this way, we are better able to meet market requirements corresponding to our competencies.



alvedoor marine
Product Division of R&M Group



Wismar

Our production facility in Wismar produces furniture according to standard specifications and individual customer requirements.

From here our excellent design solutions are continuously developed. Thanks to the latest computerized numerical control (CNC) machines, we are also able to meet the most specific requirements in a short turnaround time while maintaining our quality guarantee. Furthermore, together with our suppliers we can offer a range of products – from sophisticated stainless steel work and superior solid surfaces to creative mirrors, glass features, and high-grade upholstery.



Rostock

Alvedoor Marine manufactures walls, ceilings, doors, floors, cabins, and wet units in Rostock just in time. We have installed a professional production line at this site, whereby we are able to deliver all products in time and ready for installation on board. One of the important aspects in our business is excellent quality management. Our product certification department is therefore situated in Rostock, and our team on site guarantees the highest quality.

Kunshan

Our third production facility is located in Kunshan, near Shanghai. It is here that we produce doors, high-grade wall and ceiling panels as well as wet units. European standards of quality and international logistics guidelines are strictly observed during the manufacturing process. The team is multinational and has long-term experience.



Our services:

- Individual customizations and configurations on request
- Complete installation for electrical, air conditioning and sprinkler systems
- Just-in-time delivery
- Guarantee of quality
- Assembly line for prefabricated wet units and cabins on site
- Tested and approved structural materials
- Worldwide shipping, assembly, and installation



Walls

Various wall styles with best fire protection



Apart from quality, our walls of different classifications and surface coatings are equipped with the best possible fire protection to ensure the highest level of safety. To guarantee comfort on board for every passenger and crew member, all walls are tested for sound insulation according to the international guideline ISO 140-3 and can achieve noise values up to 61 dB, depending on the product. We offer all interior architectural preferences and requirements in a variety of designs and colors. We manufacture single, double, and multi-layered walls. To meet individual customer requirements, all walls feature A and B classification and are available with steel, stainless steel, aluminum, or PVC coatings, and varnished in RAL and NCS colors.

Standard wall panels

The wall panels are available in widths of up to 1,100 mm and heights of up to 2,500 mm.

- Single wall (25 mm, 50 mm)
- Double wall (25 mm)
- Multi-layered wall (50 mm)

Classifications

- A-60
- B-15
- B-0

Surface coatings

- Steel, stainless steel
- Aluminum
- PVC
- RAL and NCS varnish colors

Ceilings

All decks on board demand perfect ceiling systems

Our ceiling systems consist of metal layers filled with mineral wool. Because of their construction, we can guarantee robustness and simple installation on board. They are tested for fire protection and are soundproof. In addition to our standard ceiling fixtures, the panels can also be fitted with tested fireproof inspection hatches. The panels have a size of 300 mm to 600 mm in width and 3,000 mm in length. But the panels can also be produced in other sizes and with all surfaces tailored to customers' need.

We offer three types of ceiling systems, which differ mainly in their installation method:

- Systems that can be disassembled at any time
- Design with a tongue and groove connecting system
- Design with panels that can be bolted to one another



Standard ceiling panels

The ceiling panels come in a standard size, measuring 300 mm to 600 mm in width and 3,000 mm in length. They can also be manufactured and supplied in other sizes if required.

- Ceiling panel (25 mm, 50 mm)
- Single-layer-tray ceiling panel, removable (35 mm)
- Sandwich ceiling panel, removable (35 mm)
- Ceiling panel with shadow gap (20 mm)

Classifications

- B-15/A-30
- B-0/A-30

Surface coatings

- Steel, stainless steel
- Aluminum (C-class only)
- RAL and NCS varnish colors
- Perforation (mainly for machinery control rooms)

Floors

Floors with excellent noise reduction properties



On board every type of ship, many different noises and vibrations as well as physical forces can affect permeate through all the decks. Therefore, it is very important to install floors that hinder this on a high level – our products are the perfect solution. And because fire protection is another important aspect, our floor systems are tested for dangerous fire situations in accordance with international guidelines.

Available in classifications ranging from A-60 to C-class and EPSI®, the floor systems are suitable for each purpose. The A-60 floor is characterized of a high fire protection classification and excellent acoustic insulation and the C-class floor the similar design to the A-60 floors but the insulation under the outer steel layer covering is thinner. The EPSI is a specially developed system whose main characteristics are extremely good soundproofing properties and particular resistance to moisture. The fast laying and short curing time of approximately 24 hours facilitates the installation of the system. Moreover, there is no need for expansion joints, which contributes also to the simple installation. The EPSI® floor is available in thicknesses ranging from 60 mm to 120 mm.

Doors

Safety and privacy

The cabins for the crew and the passengers on board are only complete when equipped with a door – giving passengers and the crew inside a sense of safety and privacy. Alvedoor Marine offers doors in fire classification B for the usage in cabins and doors in fire classification A for the usage in areas that require higher protection. Doors in classification A can be fitted either by welding or by bolting them to the surrounding steel structure. The doors can be applied with a clearance opening measuring up to 2,700 mm in width and 2,000 mm in height, depending on the product type.

For interior areas the installation of cabin doors featuring fire protection classification B-15 is stipulated by law. Alvedoor Marine provides cabin doors with clamping frames for that purpose. These clamping frames can be fitted during assembly into the wall structure or can be integrated into an existing wall system using a two-part frame. In principle, our doors can be outfitted with all the relevant accessories and include the right surface coating to match the design of the existing environment.

Standard doors

- Single-hinged doors
- Double-hinged doors
- Sliding doors

Classifications

- B-15
- A-15
- A-60

Surface coatings

- The door leaf can be coated with PVC, varnished, or made from stainless steel
- The frame can be varnished or made from stainless steel



Wet units

Functionality and beautiful design

In our production facilities in Rostock (Germany) and Kunshan (China), the manufacturing of wet units is our everyday business, in time and in a variety of designs tailored to customers' needs. This specifically includes the equipment, for example, the shower, mirror, or sink as well as any other wishes. We deliver the wet units in time. They are easy to transport and assemble, and are ready to operate immediately. The pipelines for fresh, grey and black water and the wiring for the electrics are already installed when the wet unit is delivered.

The most important facts about our wet units:

- B-15 classification design with high damping properties
- Stainless steel, aluminum, or preserved black steel floor pan with a Bolid floor, epoxy coating, polyurethane or tile covering
- Sandwich-style walls coated with PVC film in various patterns, or steel walls with outside insulation, and tiles or plastic surfaces
- Inspection panel behind the toilet bowl for accessing the vacuum technology
- Sandwich-style door with air gap below door leaf, lock and door limiter
- Sandwich-style ceiling coated with PVC film or with lacquered surface
- Ceiling light, wall lights, and illuminated mirror cabinets
- Stainless steel black water pipes
- Plastic or copper fresh water pipes
- Air conditioning system for exhaust air, installed in the wall or ceiling panel



Wet Unit Structure

1. Fully welded floor pan with integrated connection for pipes
2. Door frame with connection profile for incorporating the cabin wall system
3. Wall panels bolted together for good stability. The insides of the panels are lined with PVC-coated steel sheets; the outsides of the panels consist of galvanized steel sheets.
4. Corner profile made of galvanized steel to strengthen the wall connection
5. Ceiling panel is 30 mm thick. Cables and cutouts are covered by special insulation on top
6. Exhaust air diffuser
7. Copper or plastic fresh water pipes
8. Vacuum or gravity-fed toilet



Cabins

Homely atmosphere for feeling good

We design and construct high-quality cabins for inside and outside that comply with the latest standards. Thanks to our diversity in production to produce all components of a cabin for every type of ship. For example, we have long-lasting experience in producing fully outfitted wet units. Specially sealed floor pans ensure that the wet units are watertight. The electrical connections and pipelines can be installed to the on board systems immediately after the wet units have been installed. All models of cabins consist of variable wall and ceiling systems, doors, furniture, and a wet unit.

In case installation time on board is short, our prefabricated cabins are the right choice to support our customers in delivering in time. The fast and professional manufacturing process and short delivery times enable us to seamlessly integrate the wet units into to be seamlessly integrated into the ship's ongoing construction process. Prefabricated modules give us the ability to deliver everything to customers' requirements effectively.

Cabin Structure

1. Bottom frame welded with U-profile connection for wall panel installation
2. Wall panels bolted together to ensure overall stability. Panels are made of PVC-coated steel sheets on the inside and galvanized steel sheets on the outside.
3. Door frame with connection profiles for mounting on corridor wall system
4. Corner profile for strong connection to galvanized steel wall
5. Porthole made of PVC-coated metal sheets with insulation on rear
6. Fully equipped wet unit with all the necessary mounting points in inspection area for easy access
7. Ceiling profile (hat profile) – guarantees a stable connection to the surrounding wall elements of the entire cabin
8. Ceiling panel is 30 mm thick. Cables and cutouts are covered by special overlying insulation.
9. Insulated ventilation duct for transporting fresh air into the cabin. The fan housing is located in the inspection area for easy servicing.
10. Furniture to meet customers' specifications and taste

Furniture

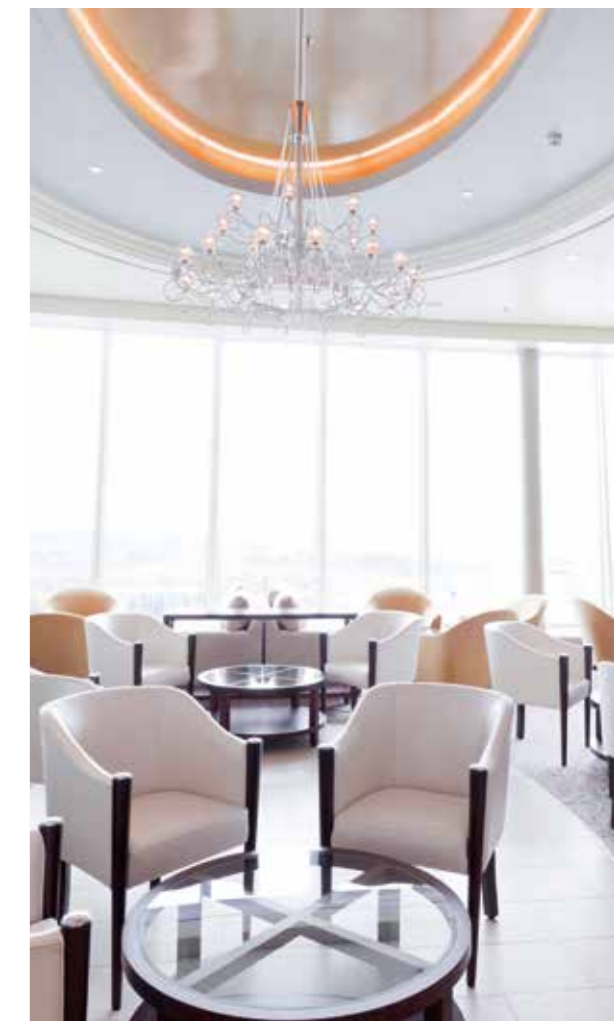
Sophisticated design meets impressive functionality

It is not enough to simply have the perfect cabin with suitable walls, floors, doors, and more. You also have to equip the cabins with suitable furniture for the best interior concept. That is what we also do for our customers. Whether hand-crafted individual pieces or series production items, we incorporate our customers' requests into all our product designs and developments.

Alvedoor Marine's furniture line ranges from sofas and seating, wooden or metal beds to table and counter systems of all kinds and wall, ceiling, and pillar panels and can be customized to suit individual needs. With regard to the materials, we consult our customers and offer an abundance of options. Our stylish solutions are not only a sight to see, but also suitable for extreme usage and in extreme conditions regarding vibrations, fire protection, and durability.

Our services:

- Diverse range of panel materials for furniture, e.g. solid surface panels, glass and metals
- Advice on implementation with regard to furniture design, decorative work, and upholstery
- Individual items of furniture with rounded or curved molded parts
- Integration of an extensive range of technical equipment, e.g. refrigerators and lighting
- Special requirements, e.g. CNC finishing on molded parts
- Custom-fit weight management
- Worldwide shipping and assembly
- Work preparation by use of CAD/CAM Solutions for all customer desires with a "Design to Build" philosophy





Solutions

Modern maritime applications are often very complex on the one hand, the crew wants functional and intelligent interiors to facilitate and support them in their often tough and extreme working conditions.

On the other hand, passengers desire aesthetically pleasing surroundings that transport them away from their everyday lives.

HVAC – Heating, Ventilation, and Air Conditioning

Perfect climate on board



Perfect indoor air quality on board, very good air quality in a closed corpus by sufficient ventilation, humidity control and, as a final point, potential for a natural ventilation system: On the one hand, the most important prerequisites for both the crew and passengers alike when it comes to feeling good. On the other hand, they are essential for the uninterrupted operation of machines, systems, and equipment. This is not only expected by passengers and crew, but also regulated by law. Whether it is a passenger or crew cabin, utility or public area, R&M offers the optimal thermic comfort and controlled air solutions for comfortable indoor climate. Undoubtedly, the precise air distribution in all AC-rooms, which are designed centrally by R&M, and the correct air balance plan always give the ideal conditions.

The different requirements on board have to be considered: For example, the kitchen must always have exhaust hoods due to the cooking odors, and the windows of the bridge must not fog up so that the captain can have the perfect view. We aim to do our best for the comfort of the crew and the passengers on board. We plan and implement perfect HVAC systems and support our customers – from the planning stage through to project completion.

As a competent partner, we develop tailor-made heating, ventilation, and air conditioning systems (HVAC) for ideal temperature, humidity and air purity. We always aim to develop efficient and energy-saving concepts, taking into account the latest quality management systems such as DIN EN ISO 9001:2008. Today, it is more important than ever to have reduced heating costs and take care of the environment. That is what we give our customers, guaranteed.

Our experts implement the most efficient and sustainable solutions, including basic design with transmission calculation, the preparation



of an air balance plan, a detailed design with the preparation of indication diagrams, the coordination and technical planning, implementation, and commissioning. Even after the project has been completed, we continue to be at our customers' side for maintenance and repairs.

Our services:

- Engineering
- Project management
- Installation
- Commissioning
- Maintenance and service (lifecycle offers)
- Turnkey services

Insulation

For best temperature in all areas on board



extremely essential for ensuring high energy efficiency, the required safety, and necessary comfort on board.

Particularly for noise-sensitive areas on board offshore vessels, which are used in drastically changing temperature and climate conditions, or for cruise ships with high noise emissions within working and living areas, as well as for piping systems that transport goods at a temperature of unusual minus or plus Celsius degrees.

Economically sustainable solutions using environmentally friendly and energy-efficient materials as well as quick and reliable completion of the insulation work are a main priority for R&M.

Our services:

- Thermal insulation
- Fire safety and noise protection
- Noise and vibration
- Floor insulation
- Pipeline and surface insulation
- Insulation of exhaust and HVAC systems
- Insulation of cargo tanks on LNG tankers
- Pressure hull insulation for submarines
- EMC (electromagnetic compatibility)

Our insulation solutions have been well established at the international shipbuilding market ever since our foundation representing the roots of our company. This means we have an abundance of know-how within our Research & Development department for this special subject. Insulation has to be well planned and installed and is

Piping systems

Optimal circulatory system on board

The right piping systems on board every ship type are absolutely essential. We plan, coordinate and install piping systems from partial to overall sections, both special and customized solutions with up to 15 individual circuits or separate systems. Compressed air, coolant as well as fresh, gray and black water have to be carried safely through the ship.

Obviously, this requires expertise, design know-how, and long-lasting experience. R&M stands for these and assumes responsibility for every piping system.

Our services:

- Design and specification
- System conceptualization
- Coordination of planning, drawing up of parts lists, installation, and drawings/construction schedules as well as their implementation
- (Pre-)fabrication, supply and installation
- Insulation of pipe work
- Pressure-testing and register certifications
- Supplier management
- Execution and project management



Welding

With a high degree of precision

All ships need welding and cutting of a high degree of precision on board for every maritime application. R&M uses tested materials and welding filler metals and engages certified welding technicians. This ensures that the design and manufacturing assembly processes are just right, including, for example, the correct welding and assembly sequence as well as the appropriate selection of suitable welding methods and types of welds.

Our welding technicians apply the accepted principles of engineering and have passed all 2G and 3G tests of American Bureau of Shipping (ABS), applying the testing code "D1.1 Structural Welding Code-Steel" by the American Welding Society (AWS) and the ABS rules. R&M is the perfect partner for your project in welding thanks to our certified and experienced team.



Shipfitting

Steel works



Section shipbuilding, steel construction, and industrial assembly of all types of vessels, including tankers, container ships, passenger and special-purpose ships as well as offshore platforms are some of the key responsibilities of R&M. Fabricating everything from individual sections to large modules of high-alloy steel weighing between two and a thousand tons as well as hull, structure, and superstructures. R&M guarantees reliable and flawless delivery. The repair of every conceivable part is also one of our main competencies.

R&M offers its customers an extensive portfolio – ranging from advisory and the drafting of a manufacturing profile to the planning and execution of the project, including coordination with the classification society. Our qualified team with many years of experience in section shipbuilding, certified by the American Bureau of Shipping (ABS) classification society, takes care of all orders professionally and in time.

Our solutions:

- Steel construction
- Section shipbuilding
- Ship repair
- Industrial assembly

Passenger areas

Only the best for your guest

The combination of style, individuality, functionality, and quality with a clear message for the passenger is a challenge. The message for the passenger states: This is your cabin, your comfort zone during your journey. R&M is aware of this and meets all requirements. For example, when building a cruise ship, R&M's consistently high supply capability of hundreds of cabins per week helps boost the cost-effectiveness of every shipbuilding project.

Our services:

- Responsibility of the entire logistics chain
- Execution and project management
- Prefabricated wet units and prefabricated cabins to reduce turnaround time
- Flat-packed wet units and prefabricated cabins
- Just-in-time delivery



Crew areas

Feel at home on the high seas



There are three different aspects that play an important role in outfitting crew areas: It is workplace, recreation room, and private retreat. All requirements have to be met and therefore experience is important. R&M pays particularly close attention to the conceptual optimization of workflow processes as well as to the protection against noise, vibration, and temperature extremes.

R&M offers tried-and-tested solutions for:

- Cabins and wet units
- Recreational rooms
- Crew mess rooms

Public areas

Great places to be and relax

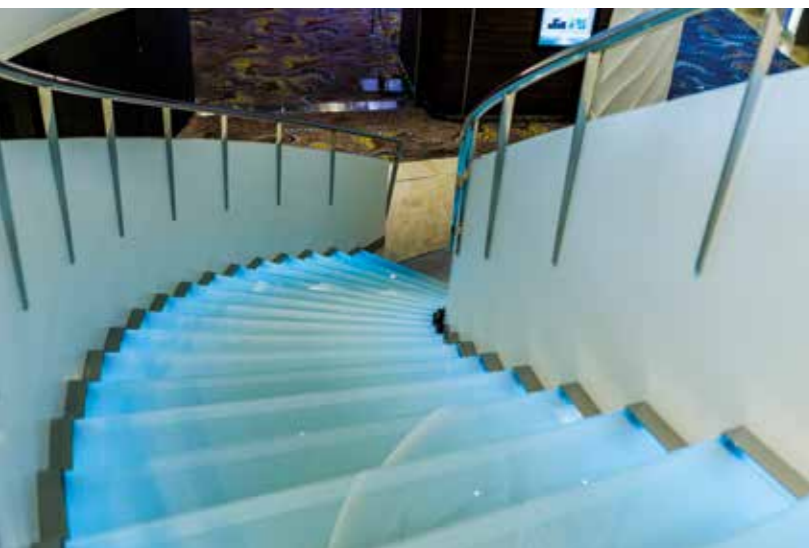


Public areas are always a special challenge for both the shipbuilder as well as for the interior outfitter. Every ship has its requirements and has to be designed in line with certain themes. R&M has been working on these challenges for decades. Today we are a specialist on board.

For each and every ship, R&M develops effective design solution in keeping with the character of the vessel and which make every cruise an unforgettable experience.

We design, develop and implement for you:

- Restaurants and bars
- Wellness and spa
- Staircases & corridors
- Lounges, discos, casinos etc.



Utility areas

High quality, safety, practicality and design combined



The interior in the utility areas has to meet high quality, safety, practicality, design, fire and vibration protection requirements as well as, perfect climate and well-designed room utilization concepts. The engineers of R&M meet these with sophisticated and economical outfitting concepts and implement them professionally and according to customer requirements.

In particular, galleys frequently perform logistical as well as culinary feats, often under difficult conditions. R&M offers solution from planning to installing extremely durable and functional kitchens as well as consultation concerning the storage of provisions or meal preparation and distribution.

We can offer and deliver for example:

- Provision shelves and pallets
- Catering equipment and neutral furniture
- Cold and freezer rooms and dry stores
- Laundry areas and equipment
- Service corridors and lobby areas

We are your unique supplier for fittings and knowledgeable advice in the utility areas.



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